In the Claims:

1. (Previously Presented) A method of inducing proliferation of isolated human marrow stromal cells in vitro by plating and replating said cells at an initial density of less than about 50 cells per square centimeter of growth surface, the method comprising

(1) providing the isolated human marrow stromal cells and a growth medium to a growth surface such that the initial density of the isolated human marrow stromal cells is less than about 50 cells per square centimeter of growth surface,

(2) incubating the growth surface of step (1) under growth-promoting conditions, whereby the human marrow stromal cells proliferate, and

(3) replating the proliferated marrow stromal cells and a growth medium to a growth surface at least one time such that the initial density of the replated isolated human marrow stromal cells is less than about 50 cells per square centimeter of growth surface, wherein the replating allows the cells to expand by a factor of at least 10-fold.

2. (Previously Presented) The method of claim 1, wherein in step (1) the initial density of the isolated human marrow stromal cells is less than about 25 cells per square centimeter of growth surface.

3. (Previously Presented) The method of claim 1, wherein in step (1) the initial density of the isolated human marrow stromal cells is less than about 12 cells per square centimeter of growth surface.

4. (Previously Presented) The method of claim 1, wherein in step (1) the initial density of the isolated human marrow stromal cells is less than about 10 cells per square centimeter of growth surface.

5. (Previously Presented) The method of claim 1, wherein in step (1) the initial density of the isolated human marrow stromal cells is less than about 6 cells per square centimeter of growth surface.

6. (Previously Presented) The method of claim 1, wherein in step (1) the initial density of the isolated human marrow stromal cells is less than about 3 cells per square centimeter of growth surface.

7. (Previously Presented) The method of claim 1, wherein in step (1) the initial density of the isolated human marrow stromal cells is less than about 1.5 cells per square centimeter of growth surface.

8. (Previously Presented) The method of claim 1, wherein in step (1) the initial density of the isolated human marrow stromal cells is less than about 1.0 cells per square centimeter of growth surface.

9. (Previously Presented) The method of claim 1, wherein in step (1) the initial density of the isolated human marrow stromal cells is less than about 0.5 cells per square centimeter of growth surface.

10. (Previously Presented) The method of claim 1, wherein after step (2) the human marrow stromal cells are harvested from the growth surface following not more than about 14 days of incubation.

11. (Previously Presented) The method of claim 1, wherein after step (2) the human marrow stromal cells are harvested from the growth surface following not more than about 10 days of incubation.

12. (Previously Presented) The method of claim 1, further wherein

(4) the second growth surface is incubated under growth-promoting conditions, whereby the human marrow stromal cells on the second growth surfact proliferate; and

(5) the human marrow stromal cells on the second growth surface are harvested.

13. (Canceled)

14. (Previously Presented) The method of claim 12, wherein in step (5) the human marrow stromal cells are harvested from the second growth surface following not more than about 14 days of incubation.

15. (Previously Presented) The method of claim 12, wherein in step (5) the human marrow stromal cells are harvested from the second growth surface following not more than about 10 days of incubation.

16. (Previously Presented) The method of claim 12, further wherein

(6) cells harvested from the second growth surface in step (5) and a growth medium are replated to a third growth surface such that the initial density of the human marrow stromal cells harvested from the second growth surface is less than about 50 cells per square centimeter of the third growth surface and

(7) the third growth surface is incubated under growth-promoting conditions, whereby the human marrow stromal cells on the third growth surface proliferate by a factor of at least 10-fold; and

(8) the human marrow stromal cells on the third growth surface are harvested.

17. (Previously Presented) The method of claim 16, wherein in step (8) the human marrow stromal cells are harvested from the third growth surface following not more than about 14 days of incubation.

18. (Previously Presented) The method of claim 16, wherein in step (8) the human marrow stromal cells are harvested from the third growth surface following not more than about 10 days of incubation.

19. (Previously Presented) The method of claim 16, wherein in step (6) the human marrow stromal cells are seeded on the third growth surface at an initial density of about

3 cells per square centimeter.

20. (Original) The method of claim 1, wherein the growth medium comprises a mammalian serum.

21. (Original) The method of claim 20, wherein the mammalian serum is fetal bovine serum.

22. (Previously Presented) The method of claim 1, further wherein in step (1) a growth factor is added to the growth medium.

23. (Original) The method of claim 22, wherein the growth factor is selected from the group consisting of fibroblast growth factor, platelet derived growth factor, insulin growth factor, and endothelial growth factor.

24. (Currently Amended) A method of enhancing *in vitro* proliferation of isolated human marrow stromal cells growing on a surface in the presence of a growth medium by plating said cells at an initial density of less than about 50 cells per square centimeter of growth surface, the method comprising supplementing the growth medium with a factor present in a conditioned medium, wherein the conditioned medium is obtained from a culture of producer human marrow stromal cells which are grown on a second surface at an initial density of at least about 0.5 cells per square centimeter and which are incubated for ~~a~~ at least about 3 days, and further wherein the proliferated isolated marrow stromal cells and a growth medium are replated at least one time to a growth surface such that the initial density of the replated isolated human marrow stromal cells is less than about 50 cells per square centimeter of growth surface, wherein the replating allows the cells to expand by a factor of at least 10-fold.

25. (Original) The method of claim 24, wherein the producer human marrow stromal cells are grown on the second surface at an initial density of at least about 12 cells per square centimeter.

26. (Original) The method of claim 24, wherein the producer human marrow stromal cells are incubated for at least about 6 days.

27. (Original) The method of claim 24, wherein the growth medium is supplemented with the factor by supplementing the growth medium with the conditioned medium.

28. (Original) The method of claim 24, wherein the growth medium is supplemented with the factor by size-fractionating the conditioned medium and then supplementing the growth medium with a fraction of the conditioned medium containing size-fractionated molecules having a molecular weight of about 30,000.

29. (Original) The method of claim 24, wherein the growth medium is supplemented with the factor by size-fractionating the conditioned medium and then supplementing the growth medium with a fraction of the conditioned medium containing size-fractionated molecules having a molecular weight of about 10,000.

30. (Canceled)

31. (Previously Presented) A method of inducing proliferation of human marrow stromal cells *in vitro* by plating said cells at an initial density of less than about 50 cells per square centimeter of growth surface, the method comprising isolating mononuclear cells from a bone marrow sample, incubating the mononuclear cells to yield colonies, isolating an individual colony, and incubating human marrow stromal cells obtained from the isolated colony in a container having a growth surface, the container containing a growth medium and the cells at an initial density of less than about 50 cells per square centimeter of growth surface, whereby the cells proliferate, and further wherein the proliferated isolated marrow stromal cells and a growth medium are replated at least one time to a growth surface such that the initial density of the replated isolated human marrow stromal cells is less than about 50 cells per square centimeter of

growth surface, wherein the replating allows the cells to expand by a factor of at least 10-fold.

32. (Previously Presented) A method of assessing the expandability of isolated human marrow stromal cells *in vitro* by plating said cells at an initial density of less than about 50 cells per square centimeter of growth surface, the method comprising incubating isolated human marrow stromal cells on a surface in the presence of a growth medium at an initial density of less than about 50 cells per square centimeter of surface and assessing the colony forming efficiency of the human marrow stromal cells, whereby the expandability of the human marrow stromal cells is approximately proportional to the colony-forming efficiency of the human marrow stromal cells, and further wherein the expanded isolated marrow stromal cells and a growth medium are replated at least one time to a growth surface such that the initial density of the replated isolated human marrow stromal cells is less than about 50 cells per square centimeter of growth surface, wherein replating allows the cells to expand by a factor of at least 10-fold.

33. (Previously Presented) The method of claim 32, wherein the human marrow stromal cells are incubated for at least about 10 days.

34. (Previously Presented) The method of claim 32, wherein the colony-forming efficiency is compared with the colony-forming efficiency of another sample of human marrow stromal cells incubated in the same manner, wherein the expandability of the human marrow stromal cells of the other sample is known.

35. (Original) The method of claim 32, wherein the colony-forming efficiency is compared with a reference plot of colony-forming efficiency versus expandability.

36. (Previously Presented) The method of claim 35, wherein the plot is that shown in Figure 2.

37-41. (Canceled)